CLAIMS

What is claimed is:

1. A communication cable comprising:

a first optical fiber;

a first intermediate layer surrounding the first optical fiber; and

a first electrically insulating jacket surrounding the first intermediate layer;

wherein the first intermediate layer includes a first electrical conductor.

2. The communication cable of claim 1, wherein the first intermediate layer also includes first strengthening material.

3. The communication cable of claim 1, wherein the first electrical conductor comprises a first collection of metallic fibers.

4. The communication cable of claim 3, wherein the first collection of metallic fibers are braided.

5. The communication cable of claim 3, wherein the first collection of metallic fibers surround the first optical fiber.

6. The communication cable of claim 1 further comprising:

a second optical fiber;

a second intermediate layer surrounding the second optical fiber; and

wherein the first electrically insulating jacket also surrounds the second intermediate layer;

wherein the second intermediate layer includes a second electrical conductor.

7. The communication cable of claim 6, wherein the first electrically insulating jacket has a zipcord format.

8. The communication cable of claim 1, further comprising a first metallic ferrule which couples to the first electrical conductor at a first end of the communication cable.

9. The communication cable of claim 8, further comprising a first electrically insulating coupling nut surrounding the first metallic ferrule.

10. The communication cable of claim 8, further comprising a first crimping sleeve configured to slide up over a rear portion of the first metallic ferrule and to crimp the first collection of metallic strands onto said rear portion.

11. An adapter for establishing optical and electrical connectivity between two cables, the adapter comprising:

an electrically conductive alignment sleeve;

an electrically insulating retainer for retaining the alignment sleeve; and

a electrically insulating housing configured to house the retainer;

wherein the housing has a first end configured for coupling to a first cable and a second end for coupling to a second cable.

12. The adapter of claim 11, wherein the alignment sleeve is a split alignment sleeve.

13. The adapter of claim 11, wherein the alignment sleeve, retainer and housing conform to the ST connector standard.

14. A method for terminating an opto-electronic cable with an opto-electronic connector, wherein the opto-electronic cable has an optical fiber, an intermediate layer comprising metallic strands surrounding the optical fiber and an electrically insulating jacket surrounding the metallic strands, the method comprising:

fixing the optical fiber in a fiber cavity within a metallic ferrule;

placing the metallic strands in proximity to a first external end portion of the metallic ferrule; and

sliding a metallic crimping sleeve over the metallic strands to crimp the metallic strands onto the first external end portion of the metallic ferrule thereby establishing an electrical contact.

15. The method of claim 14 further comprising sliding a strain relief boot over the metallic crimping sleeve.

16. The method of claim 14 further comprising twisting the metallic strands into a bundle prior to placing the metallic strands in proximity to a first external end portion of the metallic ferrule.

17. A communication system comprising:

a hybrid cable comprising a first optical fiber, a first intermediate layer surrounding the first optical fiber, a first jacket surrounding the first intermediate layer, wherein the first intermediate layer includes a first electrical conductor;

a first communication device coupled to the first optical fiber and the first electrical

conductor at a first end of the hybrid cable;

a second communication device coupled to first optical fiber and the first electrical conductor at a second end of the hybrid cable.

18. The communication system of claim 17, wherein the first electrical conductor comprises a collection of metallic strands.

19. The communication system of claim 18, wherein the collection of metallic strands are distributed within the first intermediate layer so as to surround the first optical fiber.

20. The communication system of claim 17, wherein the first communication device includes a power source configured to deliver electrical power to the second communication device through the first electrical conductor.

21. The communication system of claim 17, where the first communication device includes a light source which is configured to generate a light beam which is to be modulated and transmitted through the first optical fiber to the second communication device.

22. The communication system of claim 17, wherein the first communication device includes an optical receiver for demodulating data from an optical signal received through the first optical fiber.

23. The communication system of claim 17, wherein the second communication device is an optical antenna unit configured to receive a modulated light beam from the first optical fiber and to transmit the first light beam into the atmosphere.

24. The communication system of claim 17, wherein the second communication device is an optical antenna unit configured to receive a portion of a modulated light beam from the atmosphere and to send said portion to the first communication device through the first optical fiber.

25. The communication system of claim 17, wherein the second communication device is an optical antenna unit, wherein the optical antenna unit includes a resistive heating element which receives electrical power transmitted through the first electrical conductor from the first communication device.

26. The communication system of claim 17, wherein the first communication device includes a light source and a safety control system, wherein the safety control system is configured to detect an open loop condition in an electrical circuit which includes the first electrical conductor, wherein the safety control system is configured to decrease the emitted power of a light source in response to detecting the open loop condition.

27. The communication system of claim 17, wherein the first communication device and second communication device are fiber optic transceivers.

28. The communication system of claim 17, wherein the first communication device is situated at a first location internal to a building, wherein the second communication device is an optical antenna unit situated at a second location external to said building.

29. The communication system of claim 28, wherein the first communication device is configured for coupling to a host computer.

30. The communication system of claim 17, wherein the first communication device

is a point-to-point transceiver unit and the second communication device is an optical antenna unit.

31. The communication system of claim 17, wherein the first communication device is a point-to-multipoint optical transceiver unit and the second communication device is an optical antenna unit.

32. The communication system of claim 17, wherein the first communication device is configured for bi-directional transfer of optical signals through the first optical fiber.

33. The communication system of claim 17, wherein hybrid cable includes ST-type terminations.

34. A communication system comprising:

a hybrid cable comprising a first optical fiber, a first intermediate layer surrounding the first optical fiber, a first jacket surrounding the first intermediate layer, wherein the first intermediate layer includes a first electrical conductor;

a first communication device coupled to the first optical fiber and the first electrical conductor at a first end of the hybrid cable;

a second communication device coupled to first optical fiber and the first electrical conductor at a second end of the hybrid cable.

wherein the first communication device includes a light source and a safety control system, wherein the safety control system is configured to detect change in an electrical quantity associated with an electrical circuit which includes the first electrical conductor, wherein the safety control system is configured to decrease the power emitted by a light source in response to detecting the change.

35. A method for manufacturing a hybrid cable, the method comprising:
arranging first spools of metallic fiber on a wheel;
pulling a length of optical fiber through the center of the wheel;
rotating the wheel to induce wrapping of the metallic fibers around the optical fiber as the optical fiber is pulled through the center of the wheel.

36. The method of claim 35 further comprising:
additionally arranging second spools of yarn material on the wheel; and
covering the metallic fibers, yarn material and optical fiber with a surrounding jacket;
wherein the rotation of the wheel also induces wrapping of the metallic fibers around the optical fiber as the optical fiber is pulled through the center of the wheel;

37. An adapter for coupling to an eletro-optic cable, the adapter comprising:
an electrically insulating bulkhead connector; and
a metallic clip with a central tang.

38. The adapter of claim 37, wherein the central tang has a hole for the admission of a ferrule.

39. The adapter of claim 37, wherein the bulkhead connector has a threaded end for screwing into a complementary structure.

40. The adapter of claim 37, wherein the metallic clip has a series of crimp fingers for coupling to an electrical wire.

41. The adapter of claim 37, wherein the metallic clip includes an arm which supports the central tang, where in the arm is configured to fit within a slot of the bulkhead connector.